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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Pedro M. Buarque De Macedo

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EXAMINER

SAFAVI, MICHAEL

ART UNIT

PAPER NUMBER

3637

MAIL DATE

DELIVERY MODE

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/625,102	<b>Applicant(s)</b> BUARQUE DE MACEDO, PEDRO M.	
	<b>Examiner</b> Michael Safavi	<b>Art Unit</b> 3637	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 21 November 2008.
- 2a) ☒ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1,5,13,14,23,27,29-31,37,42-47,51-59 and 63-66 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,5,13,14,23,27,29-31,37,42-47,51-59 and 63-66 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |                                                                                                            |                                                                                         |
|------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                                           | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____                                                |

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**Claims 1, 5, 13, 14, 23, 27, 29-31, 37, 42-47, 51-59 and 63-66 are rejected under 35 U.S.C. 103(a) as being unpatentable over Grady, II (U.S. Patent No. 4,324,037) in view of Zeinetz (U.S. Patent No. 3,292,316) when considering either of Williams et al. (U.S. Patent No. 4,124,365) or Blaha (U.S. Patent No. 3,056,184) and further considering any of Jones et al. (U.S. Patent No. 3,459,565), Elmer et al. (U.S. Patent No. 3,592,619) and Ford (U.S. Patent No. 2,758,937).**

Grady, II discloses, Figs. 7 and 8, an arrangement, (column), of tile units 82 held together as by tension bolts 90. At least one tile is placed between at least two metal beams 84 and held in compression by the tension bolts 90. Grady, II does not present the tiles 82 as made of a foamed glass.

However, Zeinetz teaches utilization of foamed glass tiles or blocks within a tensioned structural arrangement, col. 3, line 73 to col. 4, line 4. Fig. 11 of Zeinetz, for example, shows tension bolts 36, 39 holding foamed glass tiles, col. 4, lines 5-9, in place.

And, each of Williams et al., as at col. 1, lines 35-43, and Blaha, as at col. 3, lines 24-35, teach utilization of foamed glass tiles or blocks possessing a compressive strength in excess of 1200 psi with Williams et al. teaching a compressive strength on the order of 5,000 to 8,000 psi with each of Williams et al. and Blaha disclosing use of the foam glass as a structural member sufficiently strong for structural purposes within the building industry, col. 1, lines 19-22 of Williams et al. and col. 1, lines 10-28 of Blaha.

Further, each of Jones et al., Elmer et al., and Ford disclose manufacture of foam glass components possessing various density including a density of from 20 to 60 pounds per cubic foot, with a pore size of less than 1mm including a pore size of from 0.1mm to 0.8mm or smaller, col. 5, lines 35-43, col. 7, line 51 and col. 8, lines 5-6 of Jones et al., col. 3, lines 20-29 and lines 65-67 of Elmer et al., and col. 1, lines 45-49 and lines 63-70 of Ford.

Therefore, to have provided the structural column of Grady, II with foamed glass tile units possessing a compressive strength of from 1,000 to 10,000 psi and a pore size of less than 1.0mm including a pore size of from 0.3mm to 0.7mm, in place of the clay or cement units, thus realizing the advantages of such foamed glass units within a structural arrangement, (including for example insulation properties), would have been obvious to one having ordinary skill in the art at the time the invention was made as taught by Zeinetz when considering either of Williams et al. and Blaha and further considering any of Jones et al., Elmer et al., and Ford, (**claims 1, 5, 14, 23, 27, 29, 31, 42-47, 51, 53-59, 63, and 65**). Applying a pre-compressive force of from 1,000 to 5,000

psi to the resulting assembled foam glass units, thus affording as much recovery from the effects of a greater degree of overload, would have constituted a further obvious expedient to one having ordinary skill in the art at the time the invention was made, (**claims 1, 5, 13, 23, 27, 42-47, 52, 54-59, and 63**).

As to **claims 13, 23 and 37**, to have placed the tension bolts 90 under a tension so as to prestress the foamed glass tile units of the resulting Grady, II assembly, thus forming a more strengthened arrangement, would have been obvious to one having ordinary skill in the art at the time the invention was made with Grady, II showing the tension members outside of the foam glass tile units.

As to **claims 23, 27 54-59, and 63**, the resulting Grady, II assembly discloses a prestressed assembly for use in buildings or other structures comprising: at least one prestressed foam glass tiles, having a prestressed compression of 1000 to 10,000 psi or greater; at least two metal beams 84; and one or more tension members 90, wherein said at least one foam glass tiles are placed between said at least two metal beams and held in compression of at least 1,000 to 5,000 psi by said one or more tension members.

As to **claims 14, 31, 53 and 65**, the resulting Grady, II assembly discloses a prestressed assembly having tension members comprised of tension bolts 90.

As to **claims 30 and 64**, to have formed the metal, force transmitting beams 84 of steel, thus realizing the advantages of such old and well known construction material, would have constituted a further obvious expedient to one having ordinary skill in the art at the time the invention was made.

**Claims 1, 5, 13, 14, 42-47, and 51-53 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ellis (U.S. Patent No. 3,430,397) in view of Zeinetz (U.S. Patent No. 3,292,316) when considering either of Williams et al. (U.S. Patent No. 4,124,365) or Blaha (U.S. Patent No. 3,056,184) and further considering any of Jones et al. (U.S. Patent No. 3,459,565), Elmer et al. (U.S. Patent No. 3,592,619) and Ford (U.S. Patent No. 2,758,937).**

Ellis discloses, Fig. 2, an arrangement, (column), of tile units 12 held together as by tension members 30 or 26/28/30. At least one tile is placed and held in compression by the tension bolts 30 or 26/28/30. Ellis does not present the tile units 12 as made of a foamed glass.

However, Zeinetz teaches utilization of foamed glass tiles or blocks within a tensioned structural arrangement, col. 3, line 73 to col. 4, line 4. Fig. 11 of Zeinetz, for example, shows tension bolts 36, 39 holding foamed glass tiles, col. 4, lines 5-9, in place.

And, each of Williams et al., as at col. 1, lines 35-43, and Blaha, as at col. 3, lines 24-35, teaches utilization of foamed glass tiles or blocks possessing a compressive strength in excess of 1200 psi with Williams et al. teaching a compressive strength on the order of 5,000 to 8,000 psi.

Further, each of Jones et al., Elmer et al., and Ford disclose manufacture of foam glass components possessing various density including a density of from 20 to 60 pounds per cubic foot, with a pore size of less than 1mm including a pore size of from

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0.1mm to 0.8mm or smaller, col. 5, lines 35-43, col. 7, line 51 and col. 8, lines 5-6 of Jones et al., col. 3, lines 20-29 and lines 65-67 of Elmer et al., and col. 1, lines 45-49 and lines 63-70 of Ford.

Therefore, to have provided the structural column of Ellis with foamed glass tile units possessing a compressive strength of from 1,000 to 10,000 psi and a pore size of less than 1.0mm including a pore size of from 0.3mm to 0.7mm, in place of the clay or cement units, thus realizing the advantages of such foamed glass units within a structural arrangement, (including for example insulation properties), would have been obvious to one having ordinary skill in the art at the time the invention was made as taught by Zeinetz when considering either of Williams et al. and Blaha and further considering any of Jones et al., Elmer et al., and Ford, (**claims 1, 5, 13, 14, 42-47, and 51-53**). Applying a pre-compressive force of from 1,000 to 5,000 psi to the resulting assembled foam glass units, thus affording as much recovery from the effects of a greater degree of overload, would have constituted a further obvious expedient to one having ordinary skill in the art at the time the invention was made, (**claims 1, 5, 13, 14, 42-47, and 51-53**).

As to **claims 13 and 52** to have placed the tension bolts 30, or 26/28/30, under a tension so as to prestress the foamed glass tile units of the resulting Ellis assembly, thus forming a more strengthened arrangement, would have constituted a further obvious expedient to one having ordinary skill in the art at the time the invention was made with Grady, II showing the tension members outside of the foam glass tile units.

As to **claims 14 and 53**, Ellis discloses the tension members may comprise any suitable tension-applying device. Therefore, to have provided tension bolts in place of the straps shown by Ellis would have been a further obvious expedient to one having ordinary skill in the art at the time the invention was made.

**Claims 23, 27, 29-31, 37, 54-59 and 63-66 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ellis (U.S. Patent No. 3,430,397) in view of Zeinetz (U.S. Patent No. 3,292,316) when considering either of Williams et al. (U.S. Patent No. 4,124,365) or Blaha (U.S. Patent No. 3,056,184) and further considering any of Jones et al. (U.S. Patent No. 3,459,565), Elmer et al. (U.S. Patent No. 3,592,619) and Ford (U.S. Patent No. 2,758,937) as applied to claims 1-5, 13, 14, and 42-53 above, and further in view of Grady, II.**

As to **claims 23, 27, 29, 54-59, and 63**, the resulting Ellis assembly discloses a prestressed assembly for use in buildings or other structures comprising: a plurality of prestressed foam glass tiles, having a prestressed compression of 1000 to 5,000 psi or greater; a metal beam 18/20, at the top thereof, and one or more tension members 30, or 26/28/30, with the foam glass tiles are placed between said at least two metal beams and held in compression of at least 1,000 to 5,000 psi by the tension members. The resulting Ellis assembly does not disclose the tiles between two metal, force-transmitting beams.



However, Grady, II teaches applying metal force transmitting beams on either end of a structural arrangement so as to better distribute forces when tension is applied to the respective tension members 90.

Therefore, to have provided the resulting Ellis assembly with a second or lower metal force transmitting beam to cooperate with the upper force transmitting beam, thus effecting a more uniform distribution of forces when tension is applied to the respective tension members 30, or 26/28/30, would have been obvious to one having ordinary skill in the art at the time the invention was made as taught by Grady, II. To have placed the tension bolts 30, or 26/28/30, under a tension so as to prestress the foamed glass tile units of the resulting Ellis assembly, thus forming a more strengthened arrangement, would have constituted a further obvious expedient to one having ordinary skill in the art at the time the invention was made.

As to **claims 30 and 64**, to have formed the resulting upper and lower metal, force transmitting beams 18/20 of steel, thus realizing the advantages of such old and well known construction material, would have constituted a further obvious to one having ordinary skill in the art at the time the invention was made.

As to **claims 31 and 65**, Ellis discloses the tension members may comprise any suitable tension-applying device. Therefore, to have provided tension bolts in place of the straps shown by Ellis would have been a further obvious expedient to one having ordinary skill in the art at the time the invention was made.

As to **claims 37 and 66**, the resulting Ellis assembly discloses that the tension members are not within the foam glass tiles.

### ***Response to Arguments***

Applicant's arguments with respect to claims 1, 5, 13, 14, 23, 27, 29-31, 37, 42-47, 51-59 and 63-66 have been considered but are not persuasive. Reference is made to Examiner's response to arguments within the final rejection of August 24, 2007 as well as within the final rejection of September 11, 2006 and within the final rejection of March 03, 2006.

With regard to Applicant's argument against Zeinetz, Zeinetz necessarily discloses foamed glass tiles/blocks in a prestressed arrangement with the tension bolts serving to hold the foamed glass blocks of Zeinetz in compression. The application of stretching member 38 tensions the bolts thus, placing compression upon the tiles/blocks of Zeinetz.

As for Applicant's emphasizing that "there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness", the examiner has set forth such an articulated reasoning with the necessary rational underpinning to support the instant rejection. See for example, the paragraph bridging pages 12 and 13 of the examiner's arguments within the final Office action of September 11, 2006 as well as the paragraph bridging pages 11 and 12 of the examiner's arguments within the final Office action of August 24, 2007. Thus, the examiner does "explain...[the] specific recognition or technological principle within the knowledge of one of ordinary skill in the art [that] would motivate one with no knowledge

of the present invention to make the combination of the prior art to obtain [the invention defined by the instantly rejected claims]”.

With regard to Applicant's arguments within the final paragraph on page 30 of the response, in *In re Swinehart*, 439 F.2d 210, 212, 169 USPQ 226, 228 (CCPA 1971), it is stated that:

[I]t is elementary that the mere recitation of a newly discovered function or property, inherently possessed by things in the prior art, does not cause a claim drawn to those things to distinguish over the prior art. Additionally, where the Patent Office has reason to believe that a functional limitation asserted to be critical for establishing novelty in the claimed subject matter may, in fact, be an inherent characteristic of the prior art, it possesses the authority to require the applicant to prove that the subject matter shown to be in the prior art does not possess the characteristic relied on.

Thus, Applicant's remark that “[n]owhere in any of the prior art references relied upon by the Examiner is there any teaching or even suggestion that foam glass tiles made with small pore sizes in an appropriate manner can also have the compression and prestress strengths taught and claimed by Applicant in the present application” is not convincing.

The declaration of Pedro M. Buarque De Macedo submitted May 02, 2007 has been reviewed but, is not deemed persuasive. The declaration presents arguments by Pedro M. Buarque De Macedo as to the patentability of instant claims 1, 5, 13, 14, 23, 27, 29-31, 37, 42-47, 51-59 and 63-66 over the applied prior art. As such, the examiner's response to Applicant's arguments found within the final rejection of August 24, 2007 as well as within the final rejection of September 11, 2006 and within the final rejection of March 03, 2006 serve to answer the declaration of Pedro M. Buarque De

Macedo submitted May 02, 2007. See also, page 13 of the final Office action dated August 24, 2007.

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Safavi whose telephone number is (571) 272-7046. The examiner can normally be reached on Mon.-Fri., 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lanna Mai can be reached on (571) 272-6867. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Michael Safavi/  
Primary Examiner, Art Unit 3637

M. Safavi  
February 23, 2009